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Information Technology, Quality Assurance, and Academic Library Management

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Introduction

Libraries and information centres play an essential role in meeting society's information needs. Information Technology (IT) in libraries is having a remarkable impact worldwide. It has become a phenomenon that is so pervasive that nearly all academic libraries in Nigeria have begun applying IT. Omekwu (2004) observes that:

Information Technology has brought about varieties of form of libraries and mode of disseminating information. There are now available such libraries as Automated Library, Polymedia Libraries, Electronic Libraries, Virtual Libraries and Digital Libraries. Each of these forms of IT induced Library System has its own specific features, requirements, service mode, and associated problems.

Nwalo (2000) observes the application of IT to library services has brought about tremendous improvement and makes possible more services. Mosuro (2000) reiterates the relevance of IT to library functions and services:

Over the years, advances in the area of IT have offered Library and Information Centres more efficient ways of acquiring, organizing, storing and disseminating information. New Information Technologies are becoming an integral component of and have the potential of changing the status quo of libraries and librarianship.

Computers as well as other information technology have come to play prominent roles in information management. It is unthinkable that any academic library can function effectively without the appropriate use IT . Mohammed (2004) comments that,

Electronic and computer technology have come in to remove most of the limitations of access and use of information resources and services. Instead of "written word", we now have "electronic word" existing as bits and bytes of computer memory.

Ramesh (2006) observes that new IT is changing the face of libraries because of the advent of the Internet. Virtual libraries can be a threat to the existence of the traditional libraries. He further identified such media as:

- Multimedia services

- E-mail
- Voice mail
- Discussion group
- Bulletin board
- Chat sessions
- Online reference
- Web pages

Padmini and Kishore (2006), writing on professional challenges in the digital library environment in India, comment that IT is making its way vigorously into libraries and information centres there. More and more libraries are being computerized, and several information networks are developing at national and local levels. Examples of such Omekwu (2004) summarizes the phenomenal developments, saying that, the “hi-tech information system have invaded the traditional domain of the printed media.”

The application of IT to libraries in Nigeria is yet to attain acceptable international standards. Ochogwu (2004) observes that many Nigerian libraries still use conventional tools that have become outmoded. Academic libraries have made the most progress. Many have automated their functions and services, while some are in different stages of automation. In these libraries, the pattern of information handling, provision of services, and participation in library cooperation has been transformed. As a result of that effort, this article focuses on IT and quality assurance in Nigerian academic libraries.

Quality Assurance and Academic Libraries

Quality products and services delivery are a essential in the competitive capitalistic economy. Manufacturers and service providers are deeply involved in producing quality products and services in order to control their share of the market. The demand for quality by consumers led to the establishment of standard organizations, locally and internationally. Quality standards have been introduced into manufacturing, healthcare, education, service, and governance in Nigeria. Most products produced locally or imported carry the stamp of certification.

Quality assurance, as defined by Borahan and Ziarat (2002), is:

All planned and systemic actions deemed as necessary to provide adequate confidence that a product or service will fulfill specified requirements for quality.

Adebayo (2006) considers quality assurance a way of measuring, improving, and maintaining the quality of any human activity that has value. This activity may be academic, sports performance, business, economy, etc. He defines it as “a means of ensuring that the best practices are encouraged in a social system.”

Organizations involved in quality assurance try to take responsible actions in their production processes and professional practices. Quality assurance is concerned with control of quality, the people who control quality, and continuous change and innovation.

Ekhaguere (2006) identified four major reasons for implementing quality assurance:

- Quality assurance is in the long run a cost-cutting mechanism; although good quality is expensive, the cost of poor quality outcome is even higher;
- Human beings generally act rationally; they would normally prefer good quality to poor quality;
- Good quality products show competence on the part of the producer and enhances its prestige, nationally and internationally;

- Poor quality education give rise to poor economic conditions. Moreover, the cost of retraining poor quality graduates is enormous.

Quality assurance process involves setting up standards and ensuring that the standards established are kept to, and reviewed periodically. This process entails identification of crucial elements that require evaluation; establishment of the procedure for assessing quality parameters; quality standards; regular quality assessment and periodic review of set standards.

Agunbiade (2006) views quality assurance in the library as all plans and procedures geared towards, "ensuring that the right types of library materials, books, journals, equipment furniture etc that are relevant to the types of programmes being run in each of the given institutions are procured and are available to the users of the given institution libraries."

Academic libraries provide information sources and services that support the programmes of their institutions. Odusanya and Osinulu (2004) state that, "they are expressly charged with the responsibility of meeting the information needs of scholars and students in the pursuit of their academic endeavours." Implementing quality insurance requires a meeting point between the standards for academic libraries and what is available. There are minimum standards for academic libraries as prescribed by the American Library Association, (ALA), Nigerian Library Association (NLA), National Universities Commission (NUC) Nigeria, Committee of University Librarians of Nigerian Universities (CULNU), and others.

Njoku (2006) asserts that a focused University management will ensure that the Library is:

- A learning centre and the academic hub of the institution;
- Well-stocked with current books and journals for learning and research.

Implementation of quality assurance ensures efficient and effective services. This level of performance can be attained through

- Clearly defined aims and objectives, functions, and services to be provided to both the parent organization and the clientele.
- Established functional units with clearly spelt out responsibilities backed with adequate delegated authority.
- Employment and training of personnel charged with the responsibility of running the libraries.
- Established minimum level of performance, and institution to ensure compliance with the agreed minimum standards (standards and control measures)
- Recognition and record of excellent performance
- Continuous appraisal and reappraisal of functions and services.
- Judicious spending of available funds and accountability
- Engendering the confidence of faculty personnel in their collection building and management
- Sustenance of the parent organization and clients' confidence through proactive functions and services.

Quality Assurance Issues In Academic Libraries

A set of acceptable standards serve as guides in evaluating the quality of services. The factors considered in evaluation are: collections, human resources, library buildings, equipment and facilities, funding, and automation. These issues are discussed below:

Collections

Collections are the bedrock of library services. Collections represent the strength of services. Collections of academic libraries implementing quality assurance should be large, comprehensive, current, and of good quality. The collections should support the curricula of the parent institutions and meet the needs of their clientele. The collections should conform to the standards set out by regulating bodies locally and internationally.

ALA (2006) judges the quality of an academic library's collections on usability, comprehensiveness, diversity, and size, stipulating that, "the library should provide varied, authoritative, and up-to-date resources that support its mission and the needs of undergraduates, post graduates and faculty staff."

Staffing

The relevance of personnel to the achievement of goals and objectives of academic libraries cannot be over emphasized. Staff are the activators of functions and services. Amusa and Odunewu (2006) describe how library staff use their expertise in evaluating and anticipating users' needs through selection and acquisition of relevant information sources; delivering information to the users through document delivery services, current awareness services; and provision of reading faculties; and collaboration with facilities to develop new services.

Vyas and Singh (2003) describe library staff as the ultimate knowledge workers. They recommend that library staff recognize what they have to offer and then ensure that management recognizes it. They must be strategic partners.

Quality services need quality staff. Those staff should possess the following skills (Birdsall 2001):

- Strong technical and technological pace that include knowledge of the appropriate selection and application of technology to solve information problems, database design, and the principle of organization of information;
- Understanding of the characteristics of information transfer, including users' information seeking behaviour, and information generation activities within the various disciplines;
- Skills in identifying and analyzing the information needs of various constituencies served and how the information need would be met through the complex information agencies;
- Understanding of the generation, production and distribution of information and of the changing paradigm as shift occur from print-based information production to other modes of production and distribution
- Communication theory and its application to information repackaging

ALA (2006) does not have specific recommendations on staff quality, but suggests an appropriate quantity of knowledgeable staff to provide for information needs of all categories of users of academic libraries, saying that, "all staff serving undergraduate students should have knowledge and ability to ensure effective management and use of the resources; possession of adequate subject background in order to meet the teaching and learning needs of users; and possession of excellent communication skills."

The NUC recommendation on staffing for academic libraries in Nigeria emphasizes the quantity rather than qualities possessed by the personnel. The NUC recommends the following:

- The ratio of professional librarian to non-professional should be 1:3
- Total library staff to student enrolment should be 1:50

- Professional staff to student enrolment should be 1:200

Academic libraries must ensure that staff are sufficient for the clientele they serve. In addition, staff must be personable and competent, and must have opportunities for continuing education. Surdarshan (1993) the need for staff to be well-motivated, qualified, well-trained, and in sufficient quantity, to provide effective services. He further emphasizes that,

The advances in information and communication technology required that the librarians be well trained to cope with the challenges posed by the new technology. The knowledge of computers, CD-ROM databases, micrographics, on-line searching and various new techniques and methods of information storage and retrieval are very essential to the present day academic library staff.

Library Facilities

Library buildings provide a platform for conducting the services of the library. Specifically, library buildings provide reading space, collections, equipment, offices and workrooms. Library buildings are significant to the success of the library organization, and certain factors are crucial. These are location, space, expandability, illumination, and aesthetic qualities.

An academic library building must be centrally located to provide easy access users. The space should adequate for collections, seating, and offices. The design must consider aesthetics, and should be flexible in order to accommodate an extension of the building in the near or distant future. The building must be well-lit and ventilated. The available standards for academic library buildings in Nigeria focus more on seating to the detriment of other quality requirements. For example, the standard for academic libraries in Nigeria is that an academic library must seat at least 25 percent of its user population at a time. However, the ALA (2006) recommendations are more comprehensive, and better for measuring quality. ALA questions to guide the measurement or evaluation:

- Are the facilities safe and environmentally controlled? Does the building design and construction conform to the safety standards, and building authority's requirements?
- Do the facilities foster collaboration, communication and cooperation among the users?
- Are the materials adequately safeguarded against loss, mutilation, theft, and other damage?
- Are appropriate seating and user space available for the variety of students' needs to be able to work? Are the facilities in the library available to all categories of users?
- Is space appropriately allocated for use including group and instructional use, study, research, the use of IT , conferences and seminars, exhibition, film viewing etc?
- Does the building allow for cooperative programmes with other libraries, and other campus units?
- Are there adequate provisions for conveniences and relaxation, cleaning and maintenance units for roofs, lighting and other electrical repairs, and general maintenance?

Equipment and facilities in the library building are equally important to provision of quality service. In the words of Rajaram (2003), "adequacy or inadequacy of infrastructural facilities in the library is directly related to users satisfaction or dissatisfaction though this is dependent on financial resources of a library."

Academic libraries should have enough seating facilities, shelving, and display cabinets, as well as adequate OPAC units, and bibliographic processing tools. Availability of equipment is not enough; it must be functional and efficiently maintained. The equipment must also conform to national and international standards.

Funding

Funding is the provision of money on a regular basis for functions, services, overhead, and is a critical factor in the management of academic libraries. Surdarshan (1993) argues for stable and adequate funding for academic libraries through adequate budgetary provisions and other levies.

Academic libraries require both recurring and non-recurring budgets. The funds available to an academic library determine the extent and quality of its functions and services. In the words of Amusa and Odunewu (2006)

Funding is an issue that cannot be toyed with in order to ensure the success of any organization, academic libraries inclusive. Libraries require good funding in order to provide better facilities and services to users. Hence, library budget should be more elastic and generous.

Arguing for adequate funding for academic libraries is of paramount importance because the libraries are not in a position to generate substantial income. The issue of adequate funding has attracted the attention of several authors in Nigeria. Among these authors are Moran (1984), Fabunmi (2004) and Nnadozie (2005).

Moran observes that the fiscal management of libraries has always been difficult because of the imbalance between the costs of services that libraries would like to provide and the resources they have available to provide such services. Fabunmi (2004) suggests the need to maximize the use of the funds through a well-planned system of library cooperation. Nnadozie (2005) recommends adequate funding and prudent management of available funds. He emphasizes that, "Increased funding would enable libraries' management to implement motivational schemes for staff, purchase current publications, acquire multimedia materials, procure other infrastructure, and working tools for qualitative library services."

A specific but highly-criticized standard is suggested by the NUC. The Commission recommends that 10 percent of the annual budget of a university should be allocated to the library of that institution as a recurrent expenditure. This standard prescription has been criticized because 10 percent may not be enough, due to the intensity of resources an academic library is expected to stock, and the range of services to offer. However ALA's (2006) position on funding requirements for academic library provides a good platform for measuring qualitative funding for academic library. ALA provides some questions to serve as guidelines:

- To what extent does the budget support appropriate staffing?
- To what extent does the budget provide support for baseline services?
- To what extent does the budget support the collection policy to provide materials or access to materials in support of library needs?
- How flexible is the budget to support necessary new programmes and innovations.
- Do the library managers have discretion and control over the budget?

Funding of academic libraries should provide for all these questions. Any funding regime that falls short of meeting these requirements is inadequate. The consequence of inadequate funding are stunted growth and the failure of academic libraries to play their role as the pivot around which faculties, colleges, and other academic institutions revolves.

Automation

Information acquisition, storage, handling, and dissemination have been tremendously and positively affected by computer technology. All routine activities involved in collection development, readers services (circulation and reference services), serials management, and technical services are

being accomplished by computer and related technology. Computer and IT application have remarkable benefits to academic libraries. Such benefits include provision of fast, effective, and efficient services; possibility of new services and functions; ease of generation of vital statistical records; cost reduction; possibility of networking and greater cooperation among libraries; improved services through access to resources of other libraries.

Aina (2003) warns that automation of academic libraries should not be a sudden decision to be taken by a library whether small or complex. It requires planning because it can be very expensive in terms of equipment, staff, and user training. Reddy (2003) advises that careful planning is a critical step in automating library services, and several components need to be taken into consideration before a library gets into automated activities.

These considerations are:

- The aim: The focal point for integrating automation into the activities and for operating and managing the activities after automation.
- Processing: Step-by-step operations performed in an orderly and predetermined sequence on information materials or other items to achieve desired result or service.
- Computer system: Sufficient computing power and capabilities to enable the automated activities to be operated effectively and efficiently.
- Computer software: Integrated library system software that will support all activities in the library. An integrated system will be more economical because it allows all the library activities to share common information and files.
- Data communication and system documentation.
- Human resources: Needed to manage, operate, and maintain automation equipment and activities.

Software requires special and detailed attention because it helps determine the success of the project. Cibarelli (1996) suggests that automation should start with the acquisition of software. In line with this recommendation, Oketunji (2006) sets out criteria for selecting library application software and sustaining it. These criteria consider hardware connections, subscribers' rights in respect of the software, history of the supplier, possibility of preview or demonstration, pricing structure, level of sophistication, support issues, reference sites, teaching aids, and system administration. Aina (2003) states emphatically that, "it is particularly important to ensure that the software selected has been used by comparable libraries, and those libraries are satisfied with it. Also the suppliers of the software selected must be reliable."

Quality assurance means that automation project objectives must be clearly stated and properly planned to guarantee success and sustainability. Factors such as electronic resource acquisition, equipment and infrastructure, funding and staffing are crucial factors in measuring standards in automated libraries.

Electronic resources should be a diverse part of the library collection, and meet the curricular needs of their institutions. Mechanisms to ensure steady subscriptions and regular updates must be instituted.

The success of an automated library hinges on harnessing automation as a means of providing effective service. To achieve this, there must be adequate equipment and infrastructure. Automation requires a building that is adequate to house equipment and the personnel. Adequate infrastructure includes a steady supply of electricity, efficient telecommunication system, maintenance of hardware and software, etc. Equipment and infrastructure needs of academic libraries should be guided by these questions to assure quality.

- Is the building earmarked for the project physically conducive for effective, easy and stimulating use of the IT equipment, and protect them?
- Is the seating capacity for the staff and clientele adequate?
- Are the infrastructural facilities available for automation adequate and reliable? Does the library have plans for challenges that may result from failure of any of the infrastructure?
- How reliable are the support services for automation in the libraries?
- The extent to which responses to these questions are positive will determine the quality assurance in automation projects of academic libraries.

Staffing of the division responsible for managing automation is very important. The division should have full compliment of staff such as system analyst, computer engineers, computer operators/typist, automation assistant/attendants, and headed by a librarian who is versatile in the knowledge of automation and networking. Uche (2005) advised that skilled and experienced staff are needed in designing, programming, testing and installation of gadgets in a computer-based systems. He further emphasized that:

The personnel should be skilled in various aspects of computer, including computer installation and the ability to convert the existing manual bibliographic data into machine readable form (retrospective conversion)

Adequate training for the personnel before and after the commencement of the projects is equally important. Such training should cover staff orientation; general computer literacy; training in application software; CD-ROM and On-line searching; Internet literacy; Networking; Trouble shooting; and Systems administration.

The quality requirement for staff should be employment of staff that can meet up with the technical and professional demands of automation; and their quantity should be commensurate with services to be provided and the user population. The American Library Association recommendation on quality of staff for academic libraries suffices here. ALA recommends that

The personnel (staff) should possess a broad knowledge and understanding of library and information science and ability to relate the potentialities of the computer to librarianship.

Funding or finance is sine qua-non to the success and sustainability of automated academic libraries. Other quality assurance issues in automation are factors or dependent variables of funding. Uche (2005) considered funding as a major resource for organizational effectiveness without which something meaningful cannot be achieved.

Generous funding of the automated system will facilitate the acquisition of diverse and extensive electronic resources, provide required equipment and infrastructure, guarantee the employment and retention of qualified staff in the required quantity, and ensure the sustainability of the automated system. The standard requirement for funding for automated library should meet adequately the above needs.

Quality Assurance and IT Roles in Academic Libraries

Effective services are factors of established standards of performance. Quality services are made possible in academic libraries when quality is assured and IT is applied to the functions and services. Academic libraries support their institutions when staff and students can take full advantage of information resources. Specific roles of quality assurance in automated academic libraries are:

- Ensure that academic libraries and automated services are seen as an important element of the staff and student learning experience.

- Quality standards are maintained and improved. Information Technology has brought enormous advantage to academic libraries, and has helped in providing solution to the problem of paucity of resources through databases, online information services and resource sharing.
- High quality information for user learning. This will be assured through planned and structured acquisition of printed information sources and those in electronic format.
- Collaboration between academic staff and the library on automation is essential to gain the support of staff for the success of the project.
- Encourage academic library stakeholders to focus on quality processes and mechanisms.
- Provide a consistent approach to quality. This involves periodic assessment of the contact to which standards are being adhered to in the library in the areas of collection, personnel, library building, equipment, and facilities, funding, and automation.

Implementation Quality Assurance and IT in Academic Libraries

Implementations of quality assurance in academic libraries start with formulation and inauguration of Quality Assurance Policy (QAP), and planning for sustainable implementation of the policy. The policy should state the aim, objectives, and the purpose of quality assurance in the libraries. The policy must be clear and explicit, and copies made available to all members of staff. The next stage in implementing quality assurance is the institution of the Procedure of Working Quality Assurance (PWQA).

PWQA involves setting up a broad base committee to develop and manage Quality Assurance in academic libraries. The committee will develop quality standards for each Division, Section or Unit of the libraries. These standards requirements will then be developed into working manual i.e. Quality Assurance manual for personnel. This manual should be thoroughly explained and discussed with the personnel involved to enable them be aware of the processes involved in Quality Assurance. Furthermore, the committee will attend to these specific functions.

- Prepare and institute quality control system like personnel assessment procedures, and measurement job performance, qualitative funding, and prudent management of funds.
- Make provision for training and re-training of personnel to develop their skills and knowledge needed to function effectively and efficiently.
- Institute award and recognition for distinguished and dedicated services.
- Establishment of proactive public relations system for the libraries. this can be through preparation and distribution of libraries' self study report and quality reports. Effective public relation is a means through which academic libraries can attract good funding for themselves for their institutions, groups and individuals. Quality Assurance ideas and news can also be disseminated to other libraries related institution through public relations.

Ikpaahindi (2006), in his discourse on "Quality Assurance and its implications in the management of University Libraries in Nigeria " set out a road map implementing Quality Assurance. These are:

- Alignment with the University's strategic direction;
- Integration with the University's structure, systems and financial planning
- Physical infrastructure to support teaching, learning and research. This include the library physical facilities, IT facilities, monitoring and utilization of the library;
- Information resources and services to support learning, teaching and research. This has to do with the collections and services to the library. The collection must be adequate, relevant to the institution's programmes, are of good quality, and are readily available and deliverable;
- Human capital. The staffing is adequate and appropriately trained to support the library's mission, goals and objectives; and
- External participation. The libraries are active in external professional fields and contribute to the development of library and information science and services in society. There must be evidence of articulation of relationships with other higher education institution etc.

Application of IT to library services requires planning and commitment, with a broad-based committee of librarians, computer scientists, communication experts, technicians, financial experts, university administrators, and representatives of other stakeholders. Members of this committee should have knowledge of IT and its application to libraries. They must be passionate about the project and its success. This committee will ensure the following for the success of the project.

- Availability of enough funds to start the project and steady source of funds for maintenance.
- Employment of quality personnel in the right quantity to install, run, and maintain the equipment. They should be self-motivated, resourceful, and ready to accept challenges
- Appropriate schedule for the personnel. The work schedule and conditions of service provide for motivation, encouragement, and commitment.
- Support and backing of the management of the institution. The committee must ensure that the institution's management is ready to back up the project

Conclusion

Application and maintenance of quality assurance in academic libraries will improve the quality of teaching, learning, and research in tertiary institutions and in turn raise the standard of education in these institutions. Quality assurance ensures that standards are built into the functions and services of academic libraries. Application of the principles of quality assurance will ensure best practices in academic libraries leading to effective information delivery systems. IT ensures that clients' information needs are adequately provided for. In sum, sustainability of quality assurance will provide parameters for measuring academic library performance.

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